

Title (en)

METHOD AND DEVICE FOR CONTROLLING FLOW OF LIQUID ZINC IN ZINC POT FOR HOT-DIP GALVANIZATION

Title (de)

VERFAHREN UND VORRICHTUNG ZUR STEUERUNG DES FLUSSES VON FLÜSSIGEM ZINK IN EINEM ZINKTIEGEL ZUR FEUERVERZINKUNG

Title (fr)

PROCÉDÉ ET DISPOSITIF DESTINÉS À COMMANDER L'ÉCOULEMENT DE ZINC LIQUIDE DANS UN POT DE ZINC DESTINÉ À UNE GALVANISATION PAR IMMERSION À CHAUD

Publication

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Application

EP 18813530 A 20180316

Priority

- CN 201710417938 A 20170606
- CN 2018079296 W 20180316

Abstract (en)

[origin: US2020010943A1] Disclosed are a method and a device for controlling flow of liquid zinc (2) in a zinc pot (1) for hot-dip galvanization. Under the blowing effects of an air knife above the zinc pot (1) for hot-dip galvanization onto strip steel (3), the liquid zinc (2) diffuses and flows outwards to zones (zones I, II, III and IV) comprising the left side, the right side, the front end of the zinc pot, respectively, and a zone between the strip steel (3) and a furnace snout (4), and surface dross rapidly generated on the surface of the liquid zinc (2) is driven to flow outwards to the zones (zones I, II, III and IV). On edge sides of the zones (zones I, II, III and IV), travelling magnetic field generators (71, 72, 73, 74, 75, 76, 77, 78, 712, 756) are arranged in multiple sections above the surface of the liquid zinc (2) in the zinc pot (1), so as to excite a travelling magnetic field to generate an electromagnetic driving force on the liquid zinc (2) to drive the flow of the liquid zinc (2). The flow of the liquid zinc (2) caused by the travelling magnetic field generators (71, 72, 73, 74, 75, 76, 77, 78, 712, 756) is engaged with the blowing flow of the air knife, driving the surface liquid zinc (2) in the zinc pot (1) to flow in order towards a rear end (zone V) of the zinc pot (1). The surface dross floating on the surface of the liquid zinc (2) is driven by the flowing liquid zinc (2) to flow in a controlled direction.

IPC 8 full level

C23C 2/06 (2006.01); **C23C 2/40** (2006.01)

CPC (source: CN EP KR US)

B05C 3/02 (2013.01 - US); **C23C 2/00** (2013.01 - CN EP KR US); **C23C 2/0034** (2022.08 - CN EP KR US); **C23C 2/0035** (2022.08 - KR); **C23C 2/06** (2013.01 - CN EP KR US); **C23C 2/325** (2022.08 - EP US); **C23C 2/40** (2013.01 - EP KR US); **C23C 2/50** (2022.08 - KR)

Citation (search report)

- [X] WO 2013057385 A1 20130425 - ARCELORMITTAL INVESTIGACION Y DESARROLLO SL [ES], et al
- [XI] JP S5433234 A 19790310 - NISSHIN STEEL CO LTD
- See references of WO 2018223746A1

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CN111235509A

Designated contracting state (EPC)

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DOCDB simple family (publication)

US 11535921 B2 20221227; **US 2020010943 A1 20200109**; BR 112019015284 A2 20200303; CA 3051026 A1 20181213; CA 3051026 C 20211214; CN 108998750 A 20181214; CN 108998750 B 20200428; EP 3608436 A1 20200212; EP 3608436 A4 20210113; EP 3608436 B1 20230510; JP 2020504245 A 20200206; JP 6821829 B2 20210127; KR 102289500 B1 20210812; KR 20190105078 A 20190911; WO 2018223746 A1 20181213

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